

METHODS OF SAMPLING AND TESTING
MT 601-08
MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX
METRIC VERSION

1 Scope:

- 1.1 This procedure is intended as a general guide to assist in determining the basis of sampling, testing, inspection and acceptance of various materials and products commonly used on our highway projects.

2 General:

- 2.1 Listed in MT-601, Sections I and II, are various materials and products, the basis of acceptance for which may vary depending on the specifications, procedures or circumstances relating to these items.

3 Samples and Certification, MT-601, Section I:

- 3.1 In general, the department's responsibility is to assure that the material is sampled at the appropriate interval and the contractor is responsible for taking a representative sample.
- 3.2 Steel items require material certifications from manufacturers or suppliers that meet MDT specifications (refer to subsection 106.03, Certification of Compliance, 2006 Standard Specifications for Road and Bridge Construction). The appropriate certifications, material test reports, and mill test reports must be provided by the prime contractor and attached to two copies of the completed form 406. The material certifications must be signed by a manufacturers authorized representative, clearly identifying each lot of certified material or assemblies delivered to the work and the Form 406 must be signed by the prime contractor. The two copies of the Form 406 are then submitted with all the supporting documentation from the field to the Materials Bureau (1 copy) through the District lab (1 copy), with a properly filled out form 46. The form 46 must be signed by the MDT inspector making the acceptance and be submitted through the Project Manager. The contractor should be aware that without proper certification, one or the other of the following conditions will affect final acceptance:
- 3.2.1 The Project Manager can allow the materials to be incorporated into the work; however, will not pay for the material until certification is made available. If the certification indicates the material does not meet MDT specifications, the Project manager can have the material removed at the contractor's expense, or accept it at a reduced price.
- 3.2.2 The Project Manager will not allow the material to be incorporated into the work.
- 3.3 In general, unless acceptance can be made on the manufacturer's certification, outside testing agency or on field inspection reports, every item used must be sampled and tested with a statement of laboratory acceptance received before it can be incorporated into the work.
- 3.4 Other than proven trade name products which are discussed below in article 4, all major items to be sampled and tested, and all items that may be accepted on the manufacturer's certification or label are listed in alphabetical order with instructions for sampling, testing, and acceptance in MT-601, Section I. Whenever a conflict exists between a particular test method and MT-601, MT-601 will govern.
- 3.5 Acceptance of an established product may be made by the field, based on the manufacturer's certification and previous satisfactory field performance. Random samples will be taken by the field and tested by the Materials Bureau at least once a construction season.

4 Trade Name Products & Qualified Products List materials, MT-601, Section II:

- 4.1 All miscellaneous trade name products listed in Section II of MT-601 can be accepted in the field based on manufacturer's certification as long as the certification complies with subsection 106.03 (Certification of Compliance, 2006 Standard Specifications for Road and Bridge Construction). Products in Section II of MT-601 have been pre-qualified by the Materials Bureau and have proven to be acceptable when

used and applied in accordance with the manufacturer's recommendations. They are acceptable for use without Materials Bureau approval, but cannot be used

4 Trade Name Products, MT-601, Section II: (continued)

as a substitute for another product, grade, type, or class without prior written authorization by the Materials Bureau. To assure specification compliance, submit check samples to the Materials Bureau periodically for testing. Visual checks should also be made to verify the condition of the material.

- 4.2** In order to assure adherence to specifications, check samples should be submitted to the Materials Bureau periodically for testing. Visual checks should also be made to verify the condition of the material prior to use.

5 Inspected Items (Outside Testing Agency or MDT Laboratory)

- 5.1** Inspect all fabricated items during fabrication. Deliver this material to the project with permanent marks, identifying that it has been inspected, such as a metal tag (wood products), or a circle M stamp (RCP or CSP pipe, steel items, miscellaneous concrete products and signs). See attached for "Certification of Materials."

- 5.2.1** When properly marked materials are delivered to the project, they must be accompanied by a form 406 signed by the prime contractor unless accepted under 5.2.2. Attach the appropriate materials certifications, material test reports, and mill test reports to the form 406 and submit the complete package along with two copies to the Project Manager. Certifications must be submitted from the plant or point of manufacture and be completely filled out and signed by an authorized representative of the supplier. A more detailed report will follow from the inspection agency including mill tests, material certifications and the origin of manufacture for steel products.

- 5.2.2** When properly marked materials are delivered to the project, they must be accompanied by a certification of materials report or a mill report submitted from the plant or point of manufacture and be completely filled out and signed by an authorized representative of the supplier. Acceptance of the applicable certifications, material test reports and mill test reports may be made by the agency inspector for some items inspected during fabrication, such as Corrugated Steel Pipe (CSP), Reinforced Concrete Pipe (RCP), Precast Concrete Beams, and some structural steel items. The fabrication plant inspector will complete the applicable inspection form or an inspection report for the item(s) inspected. The inspector certifies all steel test reports and certifications for the material incorporated into the finished products have been received and reviewed when signing the inspection report.

The inspector then E-mails or FAXs the completed form to the MDT Engineering Project Manager and the District lab for the project. The inspection form will list the items inspected and accepted by the inspector. The inspector will maintain and file mill test reports, material test reports and manufacturer certifications for the items inspected in the materials file in the District office where the inspection is made. This file is for documentation purposes should an audit be required. The supporting documentation does not need to be sent to the Engineering Project Manager or the District lab for their files. A copy of the completed form with all applicable documentation attached must be sent to:

Certification Compliance
Materials Bureau
2701 Prospect Avenue
PO Box 201001
Helena, MT 59620-1001

- 5.3** Properly marked materials delivered to the project without a certification of materials or mill reports can be incorporated into the project at the Project Manager's discretion, but payment for the materials will be withheld until the reports are provided. It is the prime contractor's responsibility to ensure that proper reports are delivered to the Project Manager.

6 Qualified Products List:

- 6.1 The Materials Bureau maintains the Qualified Products List. MDT will confirm that the materials appearing on the Qualified Products List meet specifications described in the product specific item. Any material or producer not on the list requires product specific testing.
- 6.2 *Quality Control Testing* – The MDT requires that all products in the QPL perform quality control (QC) testing on their material.
- 6.3 *Disqualification* – Products that do not perform or are found to be non-compliant with MDT specifications may be removed from the QPL at any time and remain unlisted until such time that adherence to the specifications can be verified and the product has undergone satisfactory performance evaluation.
- 6.4 NTPEP Listings – Products that have been accepted by NTPEP can be added to MDT's QPL if the product meets our specifications. MDT will not require test samples to be sent in for testing. The NTPEP test results will be accepted in place of MDT's test results. If the product has been removed from NTPEP's list it will be removed from MDT's list. If a producer still wants their product on MDT's QPL then it will have to be tested by MDT's laboratory.

7 Small Quantity Items:

- 7.1 Projects requiring only small quantities of materials may not require standard acceptance sampling and testing. Items such as Grade C Plant Mix under 500 tons, paint under 25 gallons and minor quantities of concrete are examples. When items are designated as small quantities by the Project Manager, their acceptance will be based upon proper documentation, such as concrete mix design check, air and slump test results, aggregate gradation results, etc. The Project Manager will notify the Helena and District Labs, in writing, whenever items are accepted on this basis.

8 Optional Samples:

- 8.1 All materials incorporated into the project, whether represented by actual samples or by certification, are subject to final field inspection and acceptance by the Project Manager. He has the option to obtain more than the required minimum number of samples and to submit as many additional samples as he deems necessary to insure conformance to specifications.

9 Samples:

- 9.1 Samples of material to be incorporated into the work must be sampled by the contractor and witnessed by an MDT representative in order to be classified as **official** samples.
- 9.2 *Acceptance Samples* - Department personnel or an authorized representative will witness the actual samples taken by the contractor
- 9.3 *Quality Assurance* – Perform sampling for QA according to Montana Standard Specifications for Road and Bridge Construction for the item to be sampled. Department personnel or an authorized representative will witness samples taken by the contractor.
- 9.4 *QPL Random Testing and Auditing* – MDT reserves the right to sample materials on the QPL for testing and to perform audits of test reports. MDT representatives may sample material from the manufacturing plant, the project site, and other locations. MDT reserves the right to test samples to verify compliance with Standard Specifications for Road and Bridge Construction and corresponding supplemental specifications. Producers must maintain a complete record of all test reports for the previous two years and the current calendar year.

9 **Samples:** (continued)

- 9.5** *Independent Assurance (IA)* - The Department requires that all sampling and testing for Independent Assurance purposes be accomplished by Department personnel or authorized representatives. IA samples must be taken under the direct supervision of the Materials Supervisor or his authorized representative and must not be scheduled on such an inflexible and regular routine that its frequency can be predicted, but sufficient samples must be submitted to satisfy the frequency intended.
- 9.6** *Final Record (FR)* - **FR samples cannot be taken by personnel who generally do the sampling.** They must be taken by or under the direct supervision of the Materials Supervisor or his authorized representative and must not be scheduled on such an inflexible and regular routine that its frequency can be predicted, but sufficient samples must be submitted to satisfy the frequency intended. FR samples are to be taken in accordance with MT-602, section 5.
- 9.7** *Portland Cement* - Samples will be taken by the Materials Bureau from Montana manufacturers and suppliers. A minimum of two samples will be taken annually, more may be taken if necessary. The purpose of this sampling and testing is to establish agreement between the manufacturer's certifications and the testing done by the Materials Bureau. The Materials Bureau is inspected and accredited by the Cement and Concrete Laboratory (CCRL) as established by the National Bureau of Standards (NBS). Sampling from the project for acceptance purposes will be taken on a random basis by District personnel in accordance with MT-108. Acceptance is based upon conformity to both physical and chemical requirements listed in the specifications.

10 **Forms and Reports:**

- 10.1** Regardless of the basis of acceptance, the method of identification of all items incorporated in the project must be documented in the project records.
- 10.2** Most major materials to be tested have a report form designated for their exclusive use (see MT-513). These forms shall be completed as fully as possible and followed by distribution as indicated.
- 10.3** Materials not covered by a designated report form must be accompanied by a Miscellaneous Samples Lab Form 45. This form must be fully completed. The form must have the following information: project number, project name, date, name of the sampler, district/area, name of the product, quantity, name and address of the manufacturer, supplier and jobber, and the distribution. In the case of acceptance on the basis of certification or field inspection, a Form 46 or Form 406 should be used. A remark must be made that a sample is not being submitted and acceptance is on the basis of an authorized prequalification program, manufacturer's certifications or labels.

Form No. 406

**CONTRACTOR'S CERTIFICATE OF COMPLIANCE
FOR NON-STRUCTURAL STEEL & IRON ITEMS
For Compliance with the "Buy America" Provision
Std. Spec 106.09 & 23 CFR 635.410**

MDT FIELD ID
DATE-INSPECTOR'S INITIALS

MDT Project No. _____ Project Name _____

The _____
(Name of Manufacturer/Supplier) (Address) (City, State) (Phone)

has furnished to _____
(Name of Contractor) (Address) (City, State) (Phone)

the following materials for use in the construction of the above referenced project.

MDT Bid Item No.	Product Description	Quantity*	Unit LF, YD ² , m, m ³ , etc.	(AASHTO, ASTM, MDT, etc.)	Category 1 or 2

Submit all required documentation with this form. See the back of this form for general guidance on the "Buy America" documentation. Refer to MT 601 for sampling & testing requirements.

Contractor's Statement of Certification

☐ **Domestic Material.** I hereby certify that all manufacturing processes, including application of coating, occurred in the United States for the above listed materials and that those materials do meet all other requirements as set forth in the plans and specifications.

☐ **Non-Domestic Material.** I hereby certify that the above listed materials do meet the requirements as set forth in the plans and specifications with the exception that all or part of the manufacturing process may have occurred outside the United States. The material is considered non-domestic. The cost of this material, including delivery to the project, is _____.

By _____ Title _____
 (Prime Contractor's Name, Typed or Printed)

(Prime Contractor's Signature)

Date

**CONTRACTOR'S CERTIFICATE OF COMPLIANCE
FOR MISCELLANEOUS STEEL & IRON ITEMS
For Compliance with the "Buy America" Provision
Std. Spec. 106.09 & 23 CFR 635.410**

Note: Two copies of this certificate and attachments, along with the original, must be submitted to the MDT Engineering Project Manager for each type of material before that material can be used on the project. The Prime Contractor is responsible for providing proper documentation to MDT, and no payment will be made until that documentation is provided.

The form must be completely filled by the Prime Contractor. A list of materials, which may be accepted upon receipt of this form and proper documentation, is on the back of this form.

Copies of this form can be obtained from the MDT Materials Bureau, 2701 Prospect Avenue, PO Box 201001, Helena, Montana 59620-1001, or phone (406) 444-6300 or (406) 444-6298 or on the internet at www.mdt.state.mt.us. It is under MT –601 in the Montana Materials Manual.

MDT Materials Bureau will conduct random checks of documentation to confirm compliance to the "Buy American" requirement (Std. Spec. 106.09 & 23 CFR 635.410), and may require mill tests at that time. All certifications must have the "domestic steel" statement on them and be signed by a representative of that company. **There is no change in Quality Assurance procedures including sampling and testing requirements (refer to MT 601).**

For Buy America documentation, steel items are divided into 2 categories. A general guide is given below. The category of an item may vary on a case-by-case basis depending on the quantity and usage. The Project Manager determines the category of an item.

Category 1

Bridge Beams
Plate Girders
Piling (Most Items)
Diaphragms
Drilled Shaft Casing
Fluted Steel Piling
Frang. Sign Post Breakaways
Guard Angles
Guardrail (most items)
Guardrail Posts (T-101, etc.)
Impact Attenuators
Luminaire Standards and Lighting
Pedestrian Stairway
Reinforcing Steel
Sign Posts and Bases (Most Items)
Structural Steel Plate Pipe (SSPP)
Welded Wire (Most Items)
Wire Rope (Most Items)

Category 2

Barbwire
Butterfly Valves
Cattle Guard and Wing Ends
Steel Conduit
Corrugated Steel Pipe (CTP)
Delineator Posts
Ductile Iron Pipe
Fencing (Most Items)
Gate Valves
Ice Breakers
Irrigation Canal Gate
Trash Guard
Smooth Wire
Stock Tank
Steel Water Service Line
Miscellaneous Nuts, Bolts, etc.

NOTE: Numbers in parentheses are page numbers

**CONTRACTOR'S CERTIFICATE OF COMPLIANCE
FOR MISCELLANEOUS STEEL & IRON ITEMS
For Compliance with the "Buy America" Provision
Std. Spec. 106.09 & 23 CFR 635.410**

Some items, like reinforcing steel, will be in different categories for different uses. In major items such as bridges, it should be considered Category 1.

The required Buy America documentation varies for these categories.

Category 1 requires this form, full Mill Test Reports and documentation on all other steps in the process.

Category 2 requires this form and material test reports and certifications.

For non-domestic material, documentation of the cost of the material including delivery to the project is also required.

*Only list the actual quantities delivered to the project.

NOTE: Numbers in parentheses are page numbers

This page intentionally left blank.

NOTE: Numbers in parentheses are page numbers

Bituminous Treated Base (12)
 Cement Treated Base, Stockpiled (13)
 Cement Treated Base, When Used (13)
 Concrete, During Production of Aggregate (13)
 Concrete, During Production of Concrete
 for Paving, QA Projects (13)
 Concrete, During Production of Concrete
 for all Structures (14)
 Concrete, Proposed Source (14)
 Concrete Prepared from Established Source (14)
 Concrete from a New Source (15)
 Crushed Cover Material
 - QA Projects (15)
 - Non-QA Projects (15)
 Open Graded Friction Course
 - QA Projects (16)
 - Non-QA Projects (16)
 Gravel Fill (Bedding & Filter) (16)
 Grout Sand (16)
 Plant Mix Base, Over 500 Tons(when used) (16)
 Plant Mix Base, Under 500 Tons (when used) (17)
 Plant Mix Base & Surfacing (when stockpiled)(17)
 Plant Mix Surfacing (when used)
 - QA Projects (17)
 - Grade "S" Volumetric Over 10000 Tons (17)
 - Grade "S" Volumetric Under 500 Tons (18)
 - Non QA Projects Under 500 Tons (18)
 - Non QA Projects Over 500 Tons (19)
 - Preconstruction, Proposed Surfacing
 Source Samples (19)
 - Surfacing, Not Pre-Approved (19)
 Surfacing, Crushed Base Course, Crushed Top
 Surfacing, Selected Surfacing, Sand Surfacing
 - Non QA Over 500 tons (19)
 - Non QA Under 500 tons (20)
 - QA Projects (20)

BINDER: (19)**BITUMINOUS MATERIALS:**

Asphalt Cement & Liquid Asphalt
 - Non QA Projects Over 2,000 Gallons (20)
 - Non QA Projects Under 2,000 Gallons (21)
 - QA Projects (21)

Asphalt Emulsions (21)
 Performance Graded Asphalt Binder - PGAB (21)

BITUMINOUS MIXTURES:

Density Control (21)
 Bituminous Surface Treatment (21)
 Mineral Filler (22)
 Plant Mix Base (22)
 Plant Mix Surfacing (21)
 Plant Mix Surfacing (Grade "B") (22)
 Plant Mix Surfacing (Grade "C") (22)
 Hamburg Rut Tester (23)
 Plant Mix Surfacing (Grade "D") (23)
 Plant Mix Surfacing (SHRP Grade) (24)
 Recycled Pavements (24)
 Seal Coat (SC) (24)

BORROW MATERIAL:

Special Borrow (24)

BRIDGE HARDWARE:

Nuts & Bolts (24)
 Direct Tension Indicators (24)
 Expansion Joints (24)
 Elastomeric Bearing Pads (24)
 PVC Waterstop (24)

BUILDING BLOCK & BRICK (24)**CLACIUM/MAGNESIUM CHLORIDE:**

Dust Control, Prime, De-Icer (24)

CATTLE GUARD: (24)**CEMENT:**

Portland (Montana Suppliers) (24)
 Portland (Out-of-State Suppliers) (24)
 Cement Treated Base (Mixture) (25)

CONCRETE:

Admixtures (Established Sources) (25)
 Concrete Aggregate Pavement (25)
 Admixtures (New Sources) (25)

NOTE: Numbers in parentheses are page numbers

Air Test & Slump Test (Paving & Structural) (25)
Cylinders for Statistical Acceptance (Paving) (26)
Cylinders for Statistical Acceptance (Bridges) (26)

CONCRETE: (continued)

Cylinders for Structures Designed to
Support Loads (26)
Cylinders for Minor Structures with 50 CYS or more -
(Head walls, drop inlets, etc.) (27)
(21) Culvert, Barrier Rail, Curb, and Other Miscellaneous Precast Items
Curing Compounds (New Sources) (27)
Curing Compounds (Established Sources) (27)
Protective Coatings for Concrete Bridge Structures
(Linseed Oil - Boiled) (28)
Water (28)

COPPER:

Water Stop (28)

CRACK SEALER: Hot Poured, Bituminous (28)

CULVERT:

Corrugated Aluminum (28)
Corrugated Steel (28)
Coatings (28)
Corrugated Underdrain (29)
Drain Tile & Drain Pipe (29)
Reinforced Concrete (29)

DENSITY CONTROL:

Bituminous Mixtures
- QA Projects (29)
- Non-QA Projects (29)
Culvert Backfill (29)
Embankment (29)
Surfacing Material, Non-Bituminized (30)

DRAINAGE:

Underdrains – Plastic & Metal (29)

ELECTRICAL:

Conductors & Cables (30)
Conduit (Metal & Plastic) (30)

EPOXY RESIN & ADHESIVE:

For Bonding Fresh to Hardened Concrete (30)
For Bonding Hardened to Hardened Concrete (30)

EXPANSION JOINT FILLER:

Poured (Hot & Cold) (30)
Preformed (Cork, etc.) (31)

FENCING:

Barbed Wire, Woven Wire,
Chain Link, Hardware, Tie Wire (31)
Steel Fence Posts (31)
Wood Fence Posts (31)

FERTILIZER:

Under 500 Pounds (31)
Over 500 Pounds (31)

FIBER REINFORCED PADS (31)**FLY ASH:**

Blending Material (32)

GEOTEXTILES: CONSTRUCTION:

Woven, Non-Woven (32)
Erosion Control Blankets (32)
Geogrid, Geomembrane (32)

GLASS BEADS (32)**GUARD RAIL & MEDIAN RAIL:**

Hardware (32)
Steel (32)
Wire Rope (32)
Wood Posts & Blocks (32)

HIGHWAY SIGNING (32)

NOTE: Numbers in parentheses are page numbers

INSULATION (33)

MULCH (33)

NURSERY STOCK (33)

PAINT:

- Traffic (33)
- Under 25 Gallons (Non-Traffic) (33)
- Over 25 Gallons & Not Pretested (Non-Traffic) (33)

PAVEMENT MARKING MATERIALS:

- Epoxy (33)
- Preformed Plastic (34)
- Thermoplastic (34)

PEAT MOSS (34)

PILING:

- Fluted Taper (34)
- H Piles (34)
- Pre-stressed Concrete (34)
- Round Steel (34)
- Treated Timber (34)
- Untreated Timber (34)

PIPE:

- Pressure (35)
- PVC (35)
- PVC Water Main) (35)

PLUMBING FIXTURES (35)

PRESTRESS ITEMS:

- Concrete Beams (35)
- Concrete Piles (35)
- Wire Strand (35)

QUARRY:

- Geological Reconnaissance for Crushing Sites (35)

REINFORCING STEEL:

- Bars (for Field Construction) (35)
- Bars, Epoxy Coated (for Field Construction) (35)
- Bars (Pre-cast Items) (36)
- Steel Mesh (Field Construction) (36)
- Steel Mesh (Precast Items) (36)
- Wire Rope (36)

RIP-RAP (36)

ROOFING MATERIAL (36)

SEEDING (36)

SHEET ROCK (36)

SIGNS:

- Sign & Signing Material (36)

SOD: (36)

SOIL:

- Corrosion Testing (37)

STRUCTURAL STEEL:

- New Steel (37)
- Salvaged (37)

TOP SOIL:

- Imported (37)
- Salvaged (37)

WATER:

- Corrosion Testing (37)

WATER-PROOFING MATERIALS (37)

WEAR:

- Crushed Top Surfacing, Type A & B (37)
- Crushed Base Coarse, Type A & B (37)

WOOD ITEMS:

- Timber (Treated) (37)

NOTE: Numbers in parentheses are page numbers

Timber (Untreated) (37)
Preservatives (37)

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
AGGREGATE; BITUMINOUS TREATED BASE – NON QA PROJECTS OVER 500 TONS STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT208 MT210 MT217 MT219 MT228 MT230	MT201	1 SAMPLE FOR EACH 1,500 TONS (750 CUBIC METERS) FOR THE FIRST 7,500 TONS (3,750 CUBIC METERS), AND 1 SAMPLE FOR EACH 2,500 TONS (1,250 CUBIC METERS) OVER 7,500 TONS (3,750 CUBIC METERS) THEREAFTER FOR EACH TYPE OF MATERIAL.	IA SAMPLES - 1 SAMPLE FOR EACH 50,000 TONS (25,000 CUBIC METERS) FOR THE FIRST 100,000 TONS (50,000 CUBIC METERS), THEN 1 SAMPLE FOR EACH 100,000 TONS (50,000 CUBIC METERS) THEREAFTER FOR EACH TYPE OF MATERIAL. FR - 1 SAMPLE FOR EACH 4 MILES OF 2-LANE ROADWAY.	IA SAMPLES - 1 SAMPLE FOR EACH 50,000 TONS (25,000 CUBIC METERS) FOR THE FIRST 100,000 TONS (50,000 CUBIC METERS), THEN 1 SAMPLE FOR EACH 100,000 TONS (50,000 CUBIC METERS) THEREAFTER FOR EACH TYPE OF MATERIAL.
AGGREGATE; BITUMINOUS TREATED BASE – NON QA PROJECTS UNDER 500 TONS STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT208 MT210 MT217 MT219 MT228 MT230	MT201	SEE SPECIAL PROVISIONS.	FR - 1 SAMPLE FOR EACH 6.4 KILOMETERS OF 2-LANE ROADWAY, MINIMUM OF 1 PER PROJECT CONTRACT.	
AGGREGATE; BITUMINOUS TREATED BASE – QA PROJECTS STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT208 MT210 MT217 MT219 MT228 MT230	MT202	1 SAMPLE FOR EACH 2,500 TONS (1,250 CUBIC METERS); ONE LOT = 5 SAMPLES OR APPROXIMATELY 12,500 TONS (6,250 CUBIC METERS).	1 SAMPLE FOR EACH 6 LOTS (MINIMUM OF 1 PER PROJECT). FR - 1 SAMPLE FOR EACH 6.4 MILES OF 2-LANE ROADWAY, MINIMUM OF 1 PER PROJECT/CONTRACT.	1 IA SAMPLE FOR EACH 6 LOTS, MINIMUM OF 1 PER PROJECT/CONTRACT.

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
AGGREGATE; CEMENT TREATED BASE – STOCKPILED STD. SPEC. 701	SAMPLE <u>MT216</u> TEST MT216	300 LB. SAMPLE EA. SOURCE OR EA. TYPE FOR MIX DESIGN	1 SAMPLE PER PROJECT/CONTRACT		TESTED AND MIX DESIGN ISSUED.
AGGREGATE; CEMENT TREATED BASE - WHEN USED STD. SPEC. 701	SAMPLE <u>MT216</u> TEST MT216		1 SAMPLE FOR EACH 1,500 TONS (750 CUBIC METERS). 5 SAMPLES PER LOT.	1 – IA FOR EACH 5 LOTS, MINIMUM 1 PER PROJECT/ CONTRACT.	1 – IA FOR EACH 5 LOTS, MINIMUM 1 PER PROJECT/ CONTRACT.
AGGREGATE; CONCRETE AGGREGATE DURING THE PRODUCTION OF AGGREGATE STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT203 MT204 MT205 MT215	MT201	1 SAMPLE FOR EACH SIZE TO BE SUBMITTED TO DISTRICT/AREA LAB FOR TESTING. NOTE: CONTINUOUS SAMPLING DURING PRODUCTION TO CHECK MATERIAL.	1 SAMPLE FOR EACH SIZE.	
AGGREGATE; CONCRETE AGGREGATE, DURING THE PRODUCTION OF CONCRETE FOR PAVING - QA PROJECTS STD. SPEC. 501	SAMPLE <u>MT201</u> TEST MT202 MT203 MT204 MT205 MT215	MT201	1 SAMPLE FOR GRADATION AND FINENESS MODULUS FOR EACH 750 CUBIC METERS. NOTE: SAMPLES SHALL BE TAKEN FROM THE STORAGE BIN AT THE POINT OF MIXING OR FROM THE DEVICE THAT CHARGES THE STORAGE BIN. ANY DEVIATION FROM THIS SAMPLING PROCEDURE MUST BE APPROVED BY THE MATERIALS ENGINEER.	IA SAMPLES - 1 SAMPLE OF EACH SIZE FOR EACH TWO LANE.1.2 KM, MINIMUM OF 1 SAMPLE FOR PROJECTS LESS THAN 1.2 KM .	

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
AGGREGATE; CONCRETE AGGREGATE, DURING THE PRODUCTION OF CONCRETE FOR ALL STRUCTURES STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT203 MT204 MT205 MT215	MT201	1 SAMPLE OF EACH SIZE FOR EACH 125 CUBIC METERS OF CONCRETE WITH A MINIMUM OF 1 SAMPLE FOR EACH SIZE PER PROJECT. NOTE: SAMPLES WILL BE TAKEN FROM THE STORAGE BIN AT THE POINT OF MIXING OR FROM THE DEVICE THAT CHARGES THE STORAGE BIN. ANY DEVIATION FROM THIS SAMPLING PROCEDURE <u>MUST</u> BE APPROVED BY THE MATERIALS ENGINEER.	1A SAMPLES - AT LEAST 1 SAMPLE OF EACH SIZE OR EVERY 4TH SAMPLE OF EACH SIZE, MINIMUM OF 1 PER PROJECT/CONTRACT.	
AGGREGATE; CONCRETE AGGREGATE, PROPOSED SOURCE (PIT SAMPLES) STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT203 MT204 MT205 MT209	MT201		3 – 25 KG. COMPOSITE SAMPLES FROM EACH SOURCE.	
AGGREGATE: CONCRETE AGGREGATE, FROM AN ESTABLISHED SOURCE STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT203 MT204 MT205 MT219	MT201		3 – 15 KG. SAMPLES OF FINE AGGREGATE AND 3 – 25 KG. SAMPLES OF MEDIUM AND COARSE AGGREGATE FOR EACH CONSTRUCTION SEASON FOR MIX DESIGN CHECK AND QUALITY CONTROL.	

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
AGGREGATE; CONCRETE AGGREGATE, FROM A NEW SOURCE STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT203 MT204 MT205 MT209 MT215	MT201		3 – 15 KG. SAMPLES OF FINE AGGREGATE AND 3 – 25 KG. SAMPLES OF MEDIUM AND COARSE AGGREGATE.	
AGGREGATE; CRUSHED COVER MATERIAL - QA PROJECTS STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT208 MT209 MT217 MT227 MT228 MT305	MT201	1 SAMPLE FOR EACH 500 TONS (250 CUBIC METERS); 1 LOT = 5 SAMPLES OR APPROXIMATELY 2,500 TONS (1,250 CUBIC METERS).	1 SAMPLE FOR EACH LOT.	1 – 70 KG. SAMPLE FROM STOCKPILE FOR DESIGN IA SAMPLES - 1 FOR EACH PROJECT/CONTRACT.
AGGREGATE; CRUSHED COVER MATERIAL - NON QA PROJECTS STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT208 MT209 MT217 MT227 MT228 MT305	MT201	1 SAMPLE FOR EACH 500 TONS (250 CUBIC METERS).	1 SAMPLE FOR EACH 2,000 TONS (1,000 CUBIC METERS) OR 1 SAMPLE FOR EACH SOURCE.	1 – 70 KG. SAMPLE FROM STOCKPILE FOR DESIGN IA SAMPLES - 1 SAMPLE FOR EACH PROJECT/CONTRACT.

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
AGGREGATE; OPEN GRADED FRICTION COURSE - QA PROJECTS STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT208 MT217 MT315	MT201	1 SAMPLE FOR EACH 400 TONS (200 CUBIC METERS), 1 LOT = 5 SAMPLES OR APPROXIMATELY 2,000 TONS (1,000 CUBIC METERS). NOTE: 2 SAMPLES PER PROJECT WILL BE TAKEN FOR FRACTURE, GRADATION AND ADHESION.	400 LBS. FROM STOCKPILE FOR DESIGN. 1 – 15 KG. SAMPLE FOR EVERY 2 LOTS.	1 – 15 KG. SAMPLE PER PROJECT FOR GRADATION, FRACTURE AND ADHESION. IA SAMPLES - 2 FOR EACH PROJECT/CONTRACT.
AGGREGATE; OPEN GRADED FRICTION COURSE - NON QA PROJECTS STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT209 MT213 MT227	MT201	1 SAMPLE FOR EACH 1,000 TONS (500 CUBIC METERS). NOTE: 2 SAMPLES PER PROJECT WILL BE TAKEN FOR FRACTURE, GRADATION AND ADHESION.	180 KG. FROM THE STOCKPILE FOR DESIGN. 1 SAMPLE FOR EACH 4,000 TONS (2,000 CUBIC METERS) 1 – 15 KG. SAMPLE FOR GRADATION, ADHESION AND FRACTURE.	IA SAMPLES - 2 PER PROJECT/ CONTRACT.
AGGREGATE; GRAVEL FILL (BEDDING AND FILTER) STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT208	MT201		MINIMUM OF 1 SAMPLE PER SOURCE. TESTING AND ACCEPTANCE ISSUED BY DISTRICT/AREA LAB.	
AGGREGATE; GROUT SAND STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202	MT201		1 – 15 KG. SAMPLE FROM EACH SOURCE.	
AGGREGATE; PLANT MIX BASE, OVER 500 TONS (WHEN USED) BY SPECIAL PROVISION	SAMPLE <u>MT201</u> TEST MT202 MT208 MT213 MT217 MT305	MT201 MT202	1 SAMPLE FOR EACH 500 TONS (250 CUBIC METERS) OR EVERY 2 HOURS.	1 SAMPLE FOR EACH 5,000 TONS (2,500 CUBIC METERS) (SEE MT201, 16.1) 2 SAMPLES FOR EACH PROJECT FOR VOLUME SWELL AND FRACTURE. IA SAMPLES - 1 EVERY 4TH SAMPLES, MINIMUM OF ONE FOR EACH PROJECT/CONTRACT.	1 – 225 KG LB. SAMPLE FROM THE STOCKPILE FOR DESIGN IA SAMPLES - 1 EVERY 4TH SAMPLE, MINIMUM OF ONE FOR EACH PROJECT/CONTRACT.

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
AGGREGATE; PLANT MIX BASE, UNDER 500 TONS (WHEN USED) BY SPECIAL PROVISION	SAMPLE <u>MT201</u> TEST MT202 MT208 MT213 MT217 MT305	SEE SPECIAL PROVISIONS	SEE SPECIAL PROVISIONS.		IA SAMPLES – MINIMUM OF 1 PER PROJECT/CONTRACT.
AGGREGATE; PLANT MIX BASE, PLANT MIX SURFACING (WHEN STOCKPILED) STD. SPEC. 701	SAMPLE <u>MT201</u> TEST MT202 MT217 MT305	25 LB. FOR EACH 1,000 TONS		MINIMUM OF 5 SAMPLES PER PROJECT FOR FRACTURE , VOLUME SWELL .and FAA.	MINIMUM OF 5 SAMPLES PER PROJECT FOR FRACTURE , VOLUME SWELL and FAA.
AGGREGATE; PLANT MIX SURFACING QA PROJECTS (WHEN USED) STD. SPEC. 701	SAMPLE MT201 <u>MT202</u> TEST MT202 MT208 MT213 MT217 MT305	MT201 MT202	1 SAMPLE FOR EACH 600 TONS (300 CUBIC METERS), ONE LOT = 5 SAMPLES OR APPROXIMATELY 3,000 TONS (1,500 CUBIC METERS).	1 SAMPLE FOR EVERY 2 LOTS 2 SAMPLES PER PROJECT FOR VOLUME SWELL AND FRACTURE IA SAMPLES – 1 FOR EVERY 6 LOTS, MINIMUM OF 1 PER PROJECT/ CONTRACT.	1 – 225 KG. SAMPLE FROM THE STOCKPILE FOR DESIGN 2 SAMPLES PER PROJECT FOR VOLUME SWELL AND FRACTURE IA SAMPLES - 1 FOR EVERY 6 LOTS, MINIMUM OF 1 PER PROJECT/CONTRACT.
Aggregate: PLANT MIX SURFACING, GRADE “S” VOLUMETRIC, QA PROJECTS OVER 10,000 TONS (WHEN USED) STD. SPEC. 701	SAMPLE MT201 MT202 TEST MT202 MT208 MT213 MT217 MT305 MT334	75 LB.	1 SAMPLE WHEN JOB MIX TARGETS ARE SET AND ADDITIONAL SAMPLES AT EPM'S DESCRETION.		

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
Aggregate: PLANT MIX SURFACING, GRADE "S" VOLUMETRIC, NON-QA PROJECTS UNDER 500 TONS (WHEN USED) STD. SPEC. 701	SAMPLE MT201 MT202 TEST MT202 MT208 MT213 MT217 MT305 MT334	75 LB.	1 SAMPLE WHEN JOB MIX TARGETS ARE SET AND ADDITIONAL SAMPLES AT EPM'S DESCRETION.		
AGGREGATE; PLANT MIX SURFACING - NON QA PROJECTS (UNDER 500 TONS) STD. SPEC. 701	SAMPLE MT201 <u>MT202</u> TEST MT202 MT208 MT213 MT217 MT305	MT201 MT202	SEE SPECIAL PROVISIONS.		IA SAMPLES – MINIMUM OF 1 PER PROJECT/CONTRACT.

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
AGGREGATE; PLANT MIX SURFACING - NON QA PROJECTS (OVER 500 TONS) STD. SPEC. 701	SAMPLE MT201 <u>MT202</u> TEST MT202 MT208 MT213 MT217 MT305	MT201 MT202	1 SAMPLE FOR EACH 500 TONS (250 CUBIC METERS) OR 1 SAMPLE EVERY 2 HOURS (SEE MT201, 16.1).	1 SAMPLE FOR EACH 5,000 TONS (2,500 CUBIC METERS) 2 SAMPLES PER PROJECT FOR VOLUME SWELL AND FRACTURE IA SAMPLES - 1 SAMPLE EVERY 4TH SAMPLE, MINIMUM OF 1 PER PROJECT/CONTRACT.	1 – 225 KG. SAMPLE FROM THE STOCKPILE FOR DESIGN 2 SAMPLES PER PROJECT FOR VOLUME SWELL AND FRACTURE IA SAMPLES - 1 SAMPLE EVERY 4TH SAMPLE, MINIMUM OF 1 PER PROJECT/CONTRACT.
AGGREGATE; SHOULDER GRAVEL, TRAFFIC GRAVEL	SAMPLE MT201 TEST <u>MT202</u>	MT210 MT202	MINIMUM OF 1 SAMPLE PER PROJECT/CONTRACT, RESAMPLE IF MATERIAL CHANGES. SEE SPECIAL PROVISIONS.		
AGGREGATE; PROPOSED SURFACING SOURCE SAMPLES STD. SPEC. 701	MT201	MT201		TEST FOR GRADATION, LL, PI, VOLUME SWELL, SODIUM SULFATE AND MICRO-DEVAL.	ACCEPTANCE BASED ON SATISFACTORY TEST RESULTS.
AGGREGATE; SURFACING, NOT PRE-APPROVED	MT201	MT201		5 RANDOM SAMPLES PER PROJECT/CONTRACT.	ACCEPTANCE BASED ON SATISFACTORY WEAR TEST RESULTS.
AGGREGATE; SURFACING; CRUSHED BASE COURSE, CRUSHED TOP SURFACING, SELECTED SURFACING, SAND SURFACING, NON QA PROJECTS OVER 500 TONS STD. SPEC. 701	SAMPLE MT201 <u>MT202</u> TEST MT202 MT208 MT210 MT217 MT219 MT228 MT230	MT201	1 SAMPLE FOR EACH 1,500 TONS (750 CUBIC METERS) FOR THE FIRST 7,500 TONS (3,750 CUBIC METERS) AND 1 SAMPLE FOR EACH 2,500 TONS (1,250 CUBIC METERS) OVER 7,500 TONS (3,750 CUBIC METERS) THEREAFTER FOR EACH TYPE OF MATERIAL.	IA SAMPLES - 1 SAMPLE FOR EACH 50,000 TONS (25,000 CUBIC METERS) FOR THE FIRST 100,000 TONS (50,000 CUBIC METERS), THEN 1 SAMPLE FOR EACH 100,000 TONS (50,000 CUBIC METERS) FOR EACH TYPE OF MATERIAL THEREAFTER.	IA SAMPLES - 1 SAMPLE FOR EACH 50,000 TONS (25,000 CUBIC METERS) FOR THE FIRST 100,000 TONS (50,000 CUBIC METERS), THEN 1 SAMPLE FOR EACH 100,000 TONS (50,000 CUBIC METERS) FOR EACH TYPE OF MATERIAL THEREAFTER. IA SAMPLES – MINIMUM OF 1 PER PROJECT/CONTRACT.

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
AGGREGATE; SURFACING; CRUSHED BASE COURSE, CRUSHED TOP SURFACING, SELECTED SURFACING, SAND SURFACING, NON QA PROJECTS UNDER 500 TONS STD. SPEC. 701	SAMPLE MT201 <u>MT202</u> TEST MT202 MT208 MT210 MT217 MT219 MT228 MT230	MT201	SEE SPECIAL PROVISIONS.		IA SAMPLES – MINIMUM OF 1 PER PROJECT/CONTRACT.
AGGREGATE; SURFACING; CRUSHED BASE COURSE, CRUSHED TOP SURFACING, SELECTED SURFACING, SAND SURFACING, QA PROJECTS STD. SPEC. 701	SAMPLE MT201 <u>MT202</u> TEST MT202 MT208 MT210 MT217 MT219 MT228 MT230	MT201	1 SAMPLE FOR EACH 2,500 TONS (1,250 CUBIC METERS), ONE LOT = 5 SAMPLES OR APPROXIMATELY 12,500 TONS (6,250 CUBIC METERS).	IA SAMPLES - 1 SAMPLE FOR EACH 6 LOTS, MINIMUM OF 1 SAMPLE PER PROJECT/CONTRACT.	IA SAMPLES - 1 SAMPLE FOR EACH 6 LOTS, MINIMUM OF 1 SAMPLE PER PROJECT/CONTRACT.
BINDER STD. SPEC. 301	SAMPLE <u>MT201</u> TEST MT201	12 KG.	SEE MT201, PARAGRAPH 8.		
BITUMINOUS MATERIALS; LIQUID ASPHALT, NON QA PROJECTS OVER 7570 LITERS STD. SPEC. 702	SAMPLE MT302	2-1/2 LITER SAMPLES	2 – ½ LITER SAMPLES FROM EACH SHIPMENT OVER 5 TO MATERIALS BUREAU.		IA SAMPLES - FOR PROJECTS OVER 75,000 LITERS, 1 QUART FOR EACH 750,000 LITERS.

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
BITUMINOUS MATERIALS; LIQUID ASPHALT, NON QA PROJECTS UNDER 7570 LITERS STD. SPEC. 702		NONE	CERTIFICATE OF COMPLIANCE REQUESTED.		
BITUMINOUS MATERIALS; LIQUID ASPHALT, (PGAB) QA PROJECTS STD. SPEC. 702		2-1-LITER METAL CANS	2 - 1 LITER SAMPLES FOR EACH 500 METRIC TONS OF PLANT MIX, ONE LOT = 6 SAMPLES OR APPROXIMATELY 3,000 METRIC TONS. NOTE: FOR GRADE "C" BITUMINOUS MIXTURES REFER TO SPECIAL PROVISIONS.		IA SAMPLES - 1 SAMPLE FOR EVERY 5 LOTS TO MATERIALS BUREAU.
BITUMINOUS MATERIALS; ASPHALT EMULSIONS STD. SPEC. 702	SAMPLE MT302	2-1 LITERS SAMPLES IN PLASTIC CONTAINER S	2 – 1 LITER SAMPLES TAKEN FROM THE TANKER OR TRAILE. Note: 1 sample per project if the material is not a bid item.		I.A. SAMPLES - FOR PROJECTS OVER 75,000 LITERS., 1 SAMPLE FOR THE FIRST 375,000 LITERS. AND 1 SAMPLE FOR EACH 375,000 LITERS. THEREAFTER.
BITUMINOUS MIXTURES; DENSITY CONTROL, QA PROJECTS STD. SPEC. 401	SAMPLE MT212 <u>OR CORES</u> TEST MT212 MT313	MT212 MT313	1 TEST FOR EACH 600 METRIC TONS OF MIX; LOT = 5 TESTS OR APPROX. 3,000 METRIC TONS OF MIX.	IA SAMPLES - SEE MT317.	
BITUMINOUS MIXTURES; BITUMINOUS SURFACE TREATMENTS (BST) STD. SPEC. 410			SEE "BITUMINOUS MATERIALS". SEE "CRUSHED COVER AGGREGATE".		

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
BITUMINOUS MIXTURES; MINERAL FILLER (HYDRATED LIME, FLY ASH, ETC.) STD. SPEC. 713	SAMPLE <u>MT201</u> TEST MT301	MT201			1 – 2 KG. SAMPLE PER PROJECT/CONTRACT.
BITUMINOUS MIXTURES; PLANT MIX BASE BY SPECIAL PROVISION	SAMPLE MT212 <u>OR CORES</u> TEST MT212 MT313				225 KG. SAMPLE IS REQUIRED FOR MIX DESIGN. SAMPLE MUST INCLUDE AGGREGATE, MINERAL FILLER AND ASPHALT TYPE.
BITUMINOUS MIXTURES; PLANT MIX SURFACING GRADE "B" STD. SPEC. 401	SAMPLE MT201 MT202 TEST MT202			FINAL RECORD SAMPLE - 2 CORES PER 2 LANES TAKEN IN ALTERNATING LANES AT 1 KM INTERVALS.	225 KG. SAMPLE IS REQUIRED FOR MIX DESIGN. SAMPLE MUST INCLUDE AGGREGATE, MINERAL FILLER AND ASPHALT TYPE.
BITUMINOUS MIXTURES; COMMERCIAL PLANT MIX SURFACING, "GRADE C" BY SPECIAL PROVISION	SAMPLE <u>MT322</u> TEST MT306		IGNITION OVEN (1 SAMPLE FOR EACH 500 METRIC TONS OF MIX) ACCEPTANCE SAMPLE SIZE AND FREQUENCY IS DETERMINED BY MAINT. SUPERVISOR OR ENGINEER. NOTE: SEE "SPECIAL PROVISIONS" FOR MARSHALL PROPERTIES AND PLANT PRODUCTION REQUIREMENTS.	SAMPLE AND TEST AT DISTRICT'S DISCRETION. FINAL RECORD SAMPLES - 2 CORES PER 2 LANES TAKEN IN ALTERNATING LANES AT 1/2-MILE INTERVALS.	160 KG. SAMPLE IS REQUIRED FOR MIX DESIGN, SAMPLE MUST INCLUDE AGGREGATE, MINERAL FILLER AND ASPHALT TYPE -- NOTE: MIX DESIGNS TRANSFERRED FROM OTHER PROJECTS <u>MUST</u> BE APPROVED BY THE MATERIALS ENGINEER.
BITUMINOUS MIXTURES, HAMBURG RUT TESTER		75 LBS.	VOLUMETRIC – 1 SAMPLE WHEN JOB MIX TARGET IS SET. ADDITIONAL SAMPLES AT EPM'S DISCRETION. NON-VOLUMETRIC – 1 SAMPLE AFTER FIRST LOT AND ADDITIONAL SAMPLES AT EPM'S DISCRETION.		

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
BITUMINOUS MIXTURES; PLANT MIX SURFACING GRADE "D" BY SPECIAL PROVISION	SAMPLE MT201 MT202 TEST MT202		1 SAMPLE FOR EACH 600 TONS	FINAL RECORD SAMPLES - 2 CORES PER 2 LANE MILE TAKEN AT 1 KM INTERVALS.	680 KG. SAMPLE FOR MIX DESIGN, SAMPLE MUST INCLUDE AGGREGATE, MINERAL FILLER AND ASPHALT TYPE.
BITUMINOUS MIXTURES; PLANT MIX SURFACING GRADE "S" BY SPECIAL PROVISION	SAMPLE MT201 MT202 TEST MT202		1 SAMPLE FOR EACH 1000 TONS	FINAL RECORD SAMPLES - 2 CORES PER 2 LANE MILE TAKEN AT 1 KM INTERVALS.	680 KG. SAMPLE FOR MIX DESIGN, SAMPLE MUST INCLUDE AGGREGATE, MINERAL FILLER AND ASPHALT TYPE.
BITUMINOUS MIXTURES; RECYCLED PAVEMENTS BY SPECIAL PROVISION	SAMPLE MT201 MT316	MT316	SAMPLES FOR PROPOSED RECYCLE PAVEMENT, RECYCLED MIX DESIGN, RECYCLED PAVEMENT PRODUCTION. CONTROL SHALL BE TAKEN IN ACCORDANCE WITH MT316.	FINAL RECORD SAMPLES - 2 CORES PER 2 LANE MILE TAKEN AT 1 KM INTERVALS.	
BITUMINOUS MIXTURES; SEAL COAT (SC) STD. SPEC. 409			SEE "BITUMINOUS MATERIALS" SEE "AGGREGATE, CRUSHED COVER MATERIAL".		
BORROW MATERIAL; SPECIAL BORROW STD. SPEC. 203	SAMPLE <u>MT201</u> TEST MT202 MT208	MT201	SEE "SPECIAL PROVISIONS".	DETERMINE LL, PI, SOIL CLASS AND GRADATION USING THE FIELD SAMPLE SEE "SPECIAL ROVISIONS". IA SAMPLES – ONLY IF GRADATIONS REQUIRED FOR ACCEPTANCE.	SEE "SPECIAL PROVISIONS". IA SAMPLES – ONLY IF GRADATIONS REQUIRED FOR ACCEPTANCE.
BRIDGE HARDWARE; NUTS AND BOLTS STD. SPEC. 556	SAMPLE M292 ASTM A325	M292 ASTM A325	SEE SPECIAL PROVISIONS.		ACCEPTED BASED ON MANU- FACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
BRIDGE HARDWARE; DIRECT TENSION INDICATORS BY SPECIAL PROVISION	SAMPLE ASTM F959	ASTM F959	SEE SPECIAL PROVISIONS.		ACCEPTED BASED ON MANU- FACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
BRIDGE HARDWARE; EXPANSION JOINTS STD. SPEC. 707	SPECIAL PROVISION		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND FIELD INSPECTION FORM 46.		SUBJECT TO TESTING WHEN REQUESTED.
BRIDGE HARDWARE; ELASTOMERIC BEARING DEVICES STD. SPEC. 711	AASHTO M251		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND FIELD INSPECTION FORM 46.		SUBJECT TO TESTING WHEN REQUESTED.
BRIDGE HARDWARE; PVC WATERSTOP STD. SPEC. 707	ASTM D412,D746 D2240		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND FIELD INSPECTION FORM 46.		SUBJECT TO TESTING WHEN REQUESTED.
BUILDING BLOCK AND BRICK; BY SPECIAL PROVISION OR PLANS			SAMPLES WILL BE TAKEN AT RANDOM AND ACCEPTANCE ISSUED ON FIELD INSPECTION, DIST. LAB REPORTS OR MANUFACTURER'S CERTIFICATION.		
CALCIUM/MAGNESIUM CHLORIDE; DUST CONTROL, PRIME, DEICER		SAMPLE 250 ML	DETERMINE SPECIFIC GRAVITY FOR EACH DISTRIBUTOR LOAD, ACCEPT ON FORM 46. IF SAMPLE FAILS, SUBMIT FIRST SAMPLE AND ONE EVERY 400 TONS FROM DISTRIBUTOR OR WHEN TAKEN FROM DIFFERENT TANKER/RAIL CAR. SAMPLE TO MATERIALS BUREAU ON FORM 45 WITH CERT FOR TESTING.		
CATTLE GUARD STD. SPEC. 611					MATERIALS BUREAU WILL MAKE ARRANGEMENTS FOR INSPECTION.
CEMENT; PORTLAND CEMENT MONTANA SUPPLIERS STD. SPEC. 551	SAMPLE MT108	MINIMUM 7 KG.		RANDOM SAMPLES ACCORDING TO MT108.	ACCEPTANCE BASED ON MANU- FACTURER'S CERTIFICATION AND TESTS BY THE MATERIALS BUREAU. NOTE: SEE MT108.
CEMENT; PORTLAND CEMENT OUT-OF-STATE SUPPLIERS					MATERIALS BUREAU NEEDS TO BE NOTIFIED TO MAKE ARRANGEMENTS FOR PRETESTING.

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
STD. SPEC. 551					

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
CEMENT; CEMENT TREATED BASE MIXTURE STD. SPEC. 304	SAMPLE MT108 <u>MT216</u> TEST MT202 MT216	2 SPECIMENS	ONE 7 DAY AND ONE 28 DAY COMPRESSION SPECIMEN FOR EACH 2 LANE MILE FOR EACH LIFT -- 1 SAMPLE OF CEMENT PER PROJECT/CONTRACT.		
CONCRETE: ADMIXTURES - ESTABLISHED SOURCES STD. SPEC. 551	NONE	NONE			ACCEPTED ON MANUFACTURER'S CERTIFICATIONS AND SATIS- FACTORY FIELD PERFORMANCE.
CONCRETE: ADMIXTURES - NEW SOURCES STD. SPEC. 551		1 LITER	1 LITER FROM THE FIRST SHIPMENT WITH MANUFACTURER'S CERTIFICATION.		
CONCRETE; AGGREGATE PAVEMENT	SAMPLE MT201 MT202		GRADATION – 1 SAMPLE FOR EVERY 750 CUBIC METERS OF PCCP FINENESS MODULUS – MINIMUM OF 3 TESTS PER DAY.		
CONCRETE; AIR AND SLUMP TEST (PAVING AND STRUCTURAL) STD. SPEC. 551	SAMPLE MT102 MT104 <u>MT105</u> TEST MT102 MT104	MT105	ONE AIR AND SLUMP TEST ON THE 1ST THREE LOADS OF EA. CLASS FRESH CONC., THEN A MIN. OF ONE TEST FOR EA. 100 CUBIC METERS. OR PORTION THEREOF. AT LEAST ONE TEST PER DAY OF POUR IS REQUIRED. IF THE 1ST TEST SAMPLE FAILS, TESTS MUST BE PERFORMED FOR THE 2ND AND 3RD LOADS. EACH TEST WILL BE MADE USING FRESH CONCRETE.	I.A. TESTING - ONE AIR AND SLUMP TEST PER 500 CUBIC METERS OR A MIN. OF ONE PER MAJOR STR. ONE TEST PER 3.2 KILOMETERS OF 2-LANE PAVING OR MIN. OF ONE PER PROJECT/CONTRACT.	

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
CONCRETE; CYLINDERS FOR STATISTICAL ACCEPTANCE (PAVING) STD. SPEC. 551	SAMPLE MT105 <u>MT416</u> TEST MT101 MT102 MT104 MT105	MT105	TWO SETS OF CYLINDERS PER LOT - SEE ARTICLE 551.03.7 OF THE MONTANA SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION FOR LOT SIZE AND SIZE OF SET.	I.A. SAMPLES - ONE PER 3.2 KILOMETERS OF 2-LANE ROADWAY WITH A MIN. OF ONE PER PROJECT/CONTRACT.	
CONCRETE: CYLINDERS FOR STATISTICAL ACCEPTANCE (BRIDGES) STD. SPEC. 551	SAMPLE MT105 <u>MT416</u> TEST MT101 MT102 MT104 MT105	MT105	TWO SETS OF CYLINDERS PER LOT - SEE ARTICLE 551.03.7 OF THE MONTANA SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION FOR LOT SIZE AND SIZE OF SET.	I.A. SAMPLES - ONE SAMPLE FOR EACH 500 CUBIC METERS OR A MINIMUM OF ONE FOR EACH MAJOR STRUCTURE.	
CONCRETE; CYLINDERS FOR STRUCTURES DESIGNED TO SUPPORT LOADS STD. SPEC. 552	SAMPLE MT105 <u>MT416</u> TEST MT101 MT102 MT104 MT105	MT105	ONE SET OF THREE CYLINDERS FOR EACH 100 CUBIC METERS OR ANY FRACTION THEREOF FOR EACH DAY'S POUR. NOTE: THIS APPLIES TO NON-BRIDGE DESIGNED LOAD-BEARING ITEMS -- RETAINING WALLS, BUILDING FOUNDATIONS, CATTLE GUARD BASES, CULVERT FOUNDATION, AND TO CLASS AS OR BD CONCRETE FOR BRIDGES.		

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
CONCRETE; CYLINDERS FOR MINOR STRUCTURES WITH 50 CUBIC YARDS OR MORE STD. SPEC. 552	SAMPLE MT105 <u>MT416</u> TEST MT101 MT102 MT104 MT105	MT105	ONE SET OF THREE CYLINDERS FROM FIRST POUR WITH EA. CLASS AND ONE SET PER 100 CUBIC METERS THEREAFTER. NOTE: THIS INCLUDES SUCH ITEMS AS CURBS, SIDEWALKS, IRRIGATION STRUCTURES, FOUNDATIONS, SLOPE PROTECTION, CULVERT HEADWALLS, ECT. CYLINDERS ARE MAINLY TO VERIFY MIX DESIGN, PRIMARY ACCEPTANCE IS ON BATCH INSP., AIR AND SLUMP TESTS ON EA. POUR. ACCEPTANCE OF CONC. IN PRECAST ITEMS WILL BE ON BASIS OF FIELD CURED CYL. SEE STANDARD SPECIFICATIONS, SECTION 554.03.6.	I.A. SAMPLE - ONE PER 500 CYS. WITH A MINIMUM OF ONE SET.	
CONCRETE; CONCRETE CULVERT, STD. SPEC. 708, BARRIER RAIL, CURB AND OTHER MISC. PRECAST ITEMS STD. SPEC. 554	SAMPLE <u>MT110</u> TEST MT110 AASHTO T-22		A VISUAL INSPECTION WILL BE CONDUCTED ON ITEMS DELIVERED TO THE PROJECT. NOTE: ALL ITEMS SHOULD BE STAMPED WITH A CIRCLE M (M).	THE TESTING AND INSPECTION OF CONCRETE PIPE AND ASSOCIATED ITEMS WILL BE DONE BY DISTRICT LABORATORIES WHERE CONCRETE PLANTS ARE LOCATED. SEE STANDARD SPEC. 554.	MATERIALS BUREAU WILL TEST AND INSPECT AT THE ELK RIVER PLANT IN HELENA.
CONCRETE; CURING COMPOUNDS, NEW SOURCES STD. SPEC. 551		1 LITER	SAMPLE AT RANDOM FROM FIRST SHIPMENT.		
CONCRETE; CURING COMPOUNDS, ESTABLISHED SOURCES STD. SPEC. 551		NONE	ACCEPTED ON MANUFACTURER'S CERTIFICATION. SEE ESTABLISHED PRODUCTS LIST.		

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
CONCRETE; PROTECTIVE COATINGS FOR CONCRETE BRIDGE STRUCTURES (BOILED LINSEED OIL, MINERAL SPIRITS) STD. SPEC. 551		1 LITER			ACCEPTED BASED ON MANU- FACTUER'S CERTIFICATION AND SATISFACTORY TEST RESULTS. SEE NOTE 5.
CONCRETE; WATER FOR CONCRETE STD. SPEC. 551	SAMPLE MT109	1 LITER	1 LITER WHEN WATER QUALITY IS DOUBTFUL AND 1 LITER FROM EACH NEW SOURCE TO MATERIALS BUREAU.		
COPPER: WATER STOP (SHEET COPPER) STD. SPEC. 707		1-12"x12"	FABRICATION CHECK.	1 RANDOM SAMPLE FOR EACH SHIPMENT INCLUDING MANUFACTUER'S CERTIFICATION. NOTE: WEIGHT PER SQUARE FOOT AND GAUGE CHECK.	1 RANDOM SAMPLE FOR EACH SHIPMENT INCLUDING MANU- FACTUER'S CERTIFICATION NOTE: NO SAMPLE REQUIRED IF TESTED BY THE DISTRICT.
CRACK SEALER; HOT POURED, BITUMINOUS PRETESTED		13 KG.	1 SAMPLE FROM THE FIRST LOT FOR PRETESTING WITH MANUFACTURER'S CERTIFICATION		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
CRACK SEALER; HOT POURED, BITUMINOUS		2 – 1 LITER CANS	1 SAMPLE FOR EACH LOT TAKEN AT THE POINT OF APPLICATION WITH MANUFACTURER'S CERTIFICATION		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
CULVERT; CORRUGATED ALUMINUM STD. SPEC. 603	MT401	MT401	VISUAL INSPECTION.	INSPECTION AT POINT OF MANUFACTURE WITH MILL TEST REPORTS SUBMITTED BY FABRICATOR.	
CULVERT; CORRUGATED STEEL STD. SPEC. 603	MT402	MT402	VISUAL INSPECTION.	INSPECTION AT POINT OF MANUFACTURE WITH MILL TEST REPORTS SUBMITTED BY FABRICATOR.	
CULVERT; COATING STD. SPEC. 603		½ KG. SAMPLE	1 SAMPLE FOR EACH LOT OR BATCH.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
CULVERT; CORRUGATED UNDERDRAIN STD. SPEC. 603		1 – 1 METER SECTION	1 SAMPLE PER PROJECT/CONTRACT.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
CULVERT; DRAIN TILE & DRAIN PIPE STD. SPEC. 603	NONE	NONE	ACCEPTED ON MANUFACTURER'S CERTIFICATION AND FIELD INSPECTION REPORT.		RANDOM SPOT CHECKS.
CULVERT; REINFORCED CONCRETE STD. SPEC. 603	MT110	NONE	VISUAL INSPECTION.	ACCEPTED ON INSPECTION REPORT AT POINT OF MANUFACTURE.	ACCEPTED ON INSPECTION REPORT AT POINT OF MANUFACTURE.
DENSITY CONTROL; BITUMINOUS MIXTURES QA PROJECTS STD. SPEC. 401	SAMPLE <u>MT212</u> TEST MT313	MT212	1 TEST FOR EACH 600 METRIC TONS OF MIX; 1 LOT = 5 TESTS OR APPROXIMATELY 3,000 METRIC TONS OF MIX. FR SAMPLE - CORE ACCORDING TO MT317.	NOTE: DISTRICT MAY PERFORM TESTS IN PLACE OF THE FIELD. THE PROCEDURE IS THE SAME AS THE FIELD.	
DENSITY CONTROL; BITUMINOUS MIXTURES NON-QA PROJECTS STD. SPEC. 401	SAMPLE MT313 <u>CORES</u> TEST MT212 MT313	MT313	1 TEST FOR EACH 300 METERS OF PAVER TRAVEL.	NOTE: DISTRICT MAY PERFORM TESTS IN PLACE OF FIELD. THE PROCEDURE IS THE SAME AS THE FIELD.	
DENSITY CONTROL; CULVERT BACKFILL STD. SPEC. 603	SAMPLE <u>MT201</u> TEST MT218 MT229	MT201	1 TEST PER 152 MM LIFT ON EACH SIDE OF THE PIPE FOR EACH 30 METERS, A MINIMUM OF 1 TEST PER SITE.		
DENSITY CONTROL; EMBANKMENT STD. SPEC. 203	SAMPLE <u>MT201</u> TEST MT204 MT218 MT229	MT201	1 TEST FOR EACH 4,000 CUBIC METERS FOR A-1 THRU A-3 MATERIAL. 1 TEST FOR EACH 2,000 CUBIC METERS A-4 THRU A-7 MATERIAL.	IA TESTS - 1 FOR EACH 5 KILOMETERS OR 150,000 CUBIC METERS.	

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
DENSITY CONTROL; SURFACING MATERIAL (NON-BITUMINIZED) STD. SPEC. 301	SAMPLE <u>MT219</u> TEST MT219	MT219	RESPONSIBLE FOR DENSITY CONTROL. SEE SPECIAL PROVISIONS.		
DRAINAGE; UNDERDRAINS – PLASTIC & METAL STD. SPEC 708, 709		1 METER	1 SAMPLE FOR EACH 750 METERS, MINIMUM OF 1 PER PROJECT/CONTRACT.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
ELECTRICAL; CONDUCTORS AND CABLES STD. SPEC. 703			ACCEPTED ON MANUFACTURERS CERTIFICATION AND FIELD INSPECTION FORM 46. NOTE: ENSURE MATERIAL IS AS SHOWN ON ELCTRICAL SUBMITTAL PRIOR TO FIELD ACCEPTANCE.		ACCEPTED ON MANUFACTURER'S CERTIFICATION.
ELECTRICAL; CONDUIT - METAL AND PLASTIC STD. SPECS. 616, 703		1 METER	ACCEPT ON CERTIFICATION & VISUAL INSPECTION FOR QUANTITIES LESS THAN 300 LINEAL METERS. SUBMIT 2 RANDOM SAMPLES FOR QUANTITIES OVER 300 LINEAL METERS. (EACH SIZE)		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
EPOXY RESIN AND ADHESIVE; FOR BONDING FRESH TO HARD CONCRETE. STD. SPEC. 551		1 LITER OF EACH COMPON- ENT	1 SAMPLE PER PROJECT/CONTRACT.		ACCEPTED ON MANUFACTURER'S CERTIFICATION, SUBJECT TO TESTING WHEN REQUESTED BY THE MATERIALS BUREAU.
EPOXY; FOR BONDING HARDENED TO HARDENED CONCRETE STD. SPEC. 551		1 LITER OF EACH COMPON- ENT	1 SAMPLE PER PROJECT/CONTRACT.		ACCEPTED ON MANUFACTURER'S CERTIFICATION, SUBJECT TO TESTING WHEN REQUESTED BY THE MATERIALS BUREAU.
EXPANSION JOINT FILLER; POURED (HOT AND COLD) STD. SPEC. 707	SAMPLE RANDOM	1 LITER	½ LITER FOR EACH LOT WITH FORM 45 AND MATERIIALS CERTIFICATE.		

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
EXPANSION JOINT FILLER; PREFORMED (CORK, ETC.) STD. SPEC. 707	SAMPLE RANDOM	152 X 610 MM SAMPLE	1 SAMPLE WITH MATERIALS CERTIFICATE PER PROJECT /CONTRACT.		
FENCING; BARBED WIRE, WOVEN WIRE, CHAIN LINK, HARDWARD, TIE WIRE STD. SPEC. 712	SAMPLE MT413	MT413	1 SAMPLE PER 50 ROLLS SELECTED AT RANDOM. MINIMUM OF 1 SAMPLE PER PROJECT/CONTRACT.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND MATERIALS BUREAU TESTING.
FENCING; STEEL FENCE POSTS STD. SPEC. 712	SAMPLE MT413	1 PER 400	1 SAMPLE PER 400 POSTS SELECTED AT RANDOM.	ACCEPTED ON MANUFACTURER'S CERTIFICATION AND DISTRICT/AREA LAB TEST RESULTS.	ACCEPTED ON MANUFACTURER'S CERTIFICATION AND MATERIALS BUREAU TESTING WHEN REQUESTED BY DISTRICT/AREA LAB.
FENCING; WOOD FENCE POSTS STD. SPEC. 712	NONE	NONE	VISUAL INSPECTION.		PRETESTED AT THE MILL/TREATING PLANT BY THE MATERIALS BUREAU AND ACCEPTANCE ISSUED SUBJECT TO FINAL FIELD INSPECTION.
FERTILIZER; UNDER 225 KG STD. SPEC. 713	NONE	NONE	ACCEPTED ON MANUFACTURER'S CERTIFICATION.		
FERTILIZER; OVER 225 KG STD. SPEC. 713	SAMPLE MT403	1 LITER	1 RANDOM SAMPLE OF THE BLENDED FERTILIZER FROM EACH SHIPMENT SAMPLED AT THE PROJECT / CONTRACT.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND MATERIALS BUREAU TESTING.
FIBER REINFORCED PADS BY SPECIAL PROVISION OR PLANS			DIMENSION OR WEIGHT CHECK FOR COMPLIANCE.		

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
FLY ASH		2 KG.	SEE SPECIAL PROVISIONS.		FLY ASH SOURCES ARE SUBJECT TO PRE-QUALIFICATION – ACCEPTED ON MANUFACTURER'S CERTS. AND MATERIALS BUREAU TESTING. SEE SPECIA; PROVISIONS.
GEOTEXTILES; CONSTRUCTION - WOVEN, NONWOVEN STD. SPEC. 713	SAMPLE MT421	MT421	1 SAMPLE FOR EACH 8,000 SQUARE METERS. MINIMUM OF 1 SAMPLE PER PROJECT/CONTRACT.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND MATERIALS BUREAU TESTING.
GEOTEXTILES; EROSION CONTROL BLANKETS STD. SPEC. 713	NONE	NONE	ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY FIELD PERFORMANCE.		
GEOTEXTILES; GEOGRID, GEOMEMBRANE BY SPECIAL PROVISION	SAMPLE MT421	1 METER x ROLL WIDTH	1 SAMPLE FOR EACH 8,000 SQUARE METERS WITH MATERIALS CERTIFICATE. MINIMUM OF 1 SAMPLE PER PROJECT/CONTRACT.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND MATERIALS BUREAU TESTING.
GLASS BEADS; STD. SPEC. 714	SAMPLE MT419	2 - ONE LITER CANS	2 - ONE LITER SAMPLES FROM EACH LOT, RACK OR BATCH NUMBER, UP TO 4,500 KG., AND ONE SAMPLE FOR EACH ADDITIONAL 4,500 KG. OR FRACTION THEREOF.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND MATERIALS BUREAU TESTING.
GUARDRAIL & MEDIAN RAIL; - HARDWARE; STD. SPEC. 705	NONE	NONE	ACCEPTED ON MANUFACTURER'S CERTIFICATION & FROM 406.		RANDOM SPOT CHECKS.
GUARDRAIL & MEDIAN RAIL; - STEEL STD. SPEC. 705	NONE	NONE	ACCEPTED ON MANUFACTURER'S CERTIFICATION & FORM 406.		RANDOM SPOT CHECKS.
GUARDRAIL & MEDIAN RAIL; - WIRE ROPE STD. SPEC. 705	NONE	NONE	ACCEPTED ON MANUFACTURER'S CERTIFICATION & FORM 406.		RANDOM SPOT CHECKS.

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
GUARDRAIL & MEDIAN RAIL: WOOD POSTS & BLOCKS STD. SPEC. 705	MT404	NONE	VISUAL INSPECTION		INSPECTED AT THE MILL/TREATING PLANT AND ACCEPTANCE ISSUED SUBJECT TO FINAL FIELD INSPECTION.
INSULATION; SPECIAL PROVISIONS OR PLANS	NONE	NONE	DIMENSION CHECK.		
MULCH; STD. SPEC. 610	MT403	MT403	1 RANDOM SAMPLE PER PROJECT/CONTRACT.		ACCEPTED ON SATISFACTORY TEST RESULTS.
NURSERY STOCK; BY SPECIAL PROVISIONS OR PLANS	MT403	MT403	FIELD INSPECTION AND ACCEPTANCE.		
PAINT; TRAFFIC STD. SPEC. 714	MT410	2 - 1 LITER SAMPLES	SAMPLE EACH LOT OR BATCH OF PAINT USED ON THE PROJECT.		ACCEPTED ON SATISFACTORY TEST RESULTS.
PAINT; NON TRAFFIC UNDER 25 GALLONS STD. SPEC. 710	NONE	NONE			
PAINT; NON TRAFFIC OVER 25 GALLONS STD. SPEC. 710	MT410	2 - 1 LITER SAMPLES	SAMPLE TO INCLUDE LABEL FROM CAN.		ACCEPTED ON SATISFACTORY TEST RESULTS.
PAVEMENT MARKING MATERIAL; EPOXY STD. SPEC. 714	MT410	1 LITER EACH OF PIGMENT & CATALYST	5 RANDOM SAMPLES PER PROJECT/ CONTRACT REPRESENTING 10 OR MORE LOTS, 1 RANDOM SAMPLE UNDER 10 LOTS, INCLUDE MFG CERT		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY RESULTS.

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
PAVEMENT MARKING MATERIAL; PREFORMED PLASTIC STD.SPEC. 714	MT410	1 LITER EACH OF PIGMENT & CATALYST	1 SAMPLE EVERY 300 METERS, MINIMUM OF 1 PER PROJECT/CONTRACT. SUBMIT ON FROM 45 WITH MANUFACTURER'S CERTIFICATION.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY RESULTS.
PAVEMENT MARKING MATERIAL; THERMOPLASTIC STD. SPEC. 714	MT410	½ KG. OF SOLID MATERIAL OF EACH COLOR	5 RANDOM SAMPLES PER PROJECT/CONTRACT REPRESENTING 10 OR MORE LOTS, 1 RANDOM SAMPLE UNDER 10 LOTS. SAMPLE AT POINT OF APPLICATION, INCLUDE MFG CERT.	5 RANDOM SAMPLES PER PROJECT/CONTRACT REPRESENTING 10 OR MORE LOTS, 1 RANDOM SAMPLE UNDER 10 LOTS. SAMPLE AT POINT OF APPLICATION, INCLUDE MFG CERT.	
PEAT MOSS; BY SPECIAL PROVISION	MT403	½ KG. SAMPLE	1 SAMPLE PER PROJECT/CONTRACT.		
PILING; FLUTED TAPER STD. SPEC. 559	NONE	NONE	VISUAL INSPECTION.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SUBJECT TO FINAL FIELD INSPECTION.
PILING; H PILES STD. SPEC. 559	NONE	NONE	VISUAL INSPECTION.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SUBJECT TO FINAL FIELD INSPECTION.
PILING; PRESTRESSED CONCRETE STD. SPEC. 559	NONE	NONE	VISUAL INSPECTION.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SUBJECT TO FINAL FIELD INSPECTION.
PILING; ROUND STEEL STD. SPEC. 559	NONE	NONE	VISUAL INSPECTION.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SUBJECT TO FINAL FIELD INSPECTION.
PILING; TREATED TIMBER STD. SPEC. 559	MT404	NONE	VISUAL INSPECTION.		INSPECTED AT MILL/TREATING PLANT AND ACCEPTANCE ISSUED SUBJECT TO FINAL FIELD INSPECTION.
PILING; UNTREATED TIMBER STD. SPEC. 559	MT404	NONE			INSPECTED AT MILL AND ACCEP- TANCE ISSUED SUBJECT TO FINAL FIELD INSPECTION.

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
PIPE; PVC STD. SPEC. 603		1 – 1 METER SAMPLE	1 SAMPLE FOR EACH SIZE.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
PIPE: PRESSURE STD. SPEC. 603	NONE	NONE	VISUAL INSPECTION	ACCEPTED ON LAB REPORTS AND MANUFACTURERS CERTIFICATION.	
PIPE; WATER MAIN STD. SPEC. 603		1 – 1 METER SAMPLE	1 SAMPLE FOR EACH SIZE.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
PLUMBING FIXTURES; BY SPECIAL PROVISION OR PLANS	NONE	NONE	FIELD INSPECTION AND ACCEPTANCE BASED ON CATALOG CUTS & BROCHURES.		
PRESTRESS ITEM; CONCRETE BEAMS STD. SPEC. 553	MT111	MT111	VISUAL INSPECTION.	INSPECTED AT POINT OF MANUFACTURE.	
PRESTRESS ITEM; CONCRETE PILES STD. SPEC. 559	MT111	MT111	VISUAL INSPECTION.	INSPECTED AT POINT OF MANUFACTURE.	
PRESTRESS ITEM; WIRESTRAND STD. SPEC. 553	MT111	1.2 METER SAMPLE		SAMPLED AT POINT OF MANUFACTURE FOR PRESTRESSED ITEMS.	ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
QUARRY; GEOLOGICAL RECONNAISSANCE FOR CRUSHING SITES	MT224 MT408 MT409				ACCEPTED ON GEOTECHNICAL ANALYSIS.
REINFORCING STEEL; BARS (FOR FIELD CONSTRUCTION) STD. SPEC. 711	MT414	2-1 METER PIECES	SAMPLE ACCORDING TO TABLE 1, MT414.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
REINFORCING STEEL; BARS, EPOXY COATED (FOR FIELD CONSTRUCTION) STD. SPEC. 711	MT414 AASHTO M284	2-1 METER PIECES	SAMPLE ACCORDING TO TABLE 1, MT414.		ACCEPTED ON MANUFACTURERS CERTIFICATION AND SATISFACTORY TEST RESULTS.
REINFORCING STEEL; BARS, PRECAST ITEMS STD. SPEC. 711	MT110 MT111	2-1 METER PIECES	2 PIECES OF EACH SIZE FROM EACH SHIPMENT.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
REINFORCING STEEL; MESH – FIELD CONSTRUCTION STD. SPEC. 711	NONE	1 SAMPLE EACH LOT	1 SAMPLE FOUR LONGITUDINAL BARS WIDE AND FOUR TRANSVERSE BARS LONG. FIELD INSPECTION.		ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
REINFORCING STEEL; MESH (PRECAST ITEMS) STD. SPEC. 711	MT110	1 SAMPLE EACH LOT		1 SAMPLE FOUR LONGITUDINAL BARS WIDE AND FOUR TRANSVERSE BARS LONG. FIELD INSPECTION.	ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
REINFORCING STEEL; WIRE ROPE STD. SPEC. 711	AASHTO T244 M30	2-1.3 METER PIECES			ACCEPTED ON MANUFACTURER'S CERTIFICATION AND SATISFACTORY TEST RESULTS.
RIP-RAP; STD. SPEC. 613	NONE	NONE	ACCEPT WITH RIPRAP FORM 127.		ACCEPTED ON FORM 46 WHEN RECEIVED FROM FIELD.
ROOFING MATERIAL; BY SPECIAL PROVISION OR PLANS	NONE	NONE	ACCEPTED ON DIMENSION OR WEIGHT CHECK.		
SEEDING; STD. SPEC. 610	MT403	1 LITER EACH SPECIES			ACCEPTED ON SATISFACTORY TEST RESULTS RECEIVED FROM MONTANA STATE UNIVERSITY SEED LAB.
SHEET ROCK; BY SPECIAL PROVISION OR PLANS	NONE	NONE	DIMENSION CHECK.		

MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE - INDEX

MT-601

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
SIGNS & SIGNING MATERIAL; STD. SPEC. 704	MT406	MT406	VISUAL INSPECTION AND ACCEPTANCE IN ACCORDANCE WITH MT 406		
SOD;	NONE	NONE	ACCEPT WITH A FIELD INSPECTION REPORT (FORM 46). SEE SPECIAL PROVISIONS.		
SOIL; CORROSION TESTING	SAMPLING MT207	2 KG.	SUBMIT SAMPLE WITH FORM 45.		MATERIALS BUREAU WILL ISSUE CULVERT RECOMMENDATION.
STRUCTURAL STEEL; STD. SPEC. 711	NONE	NONE	VISUAL INSPECTION.		INSPECTION ARRANGED WITH MANUFACTURER -- ACCEPTED ON MILL TEST REPORTS, SHOP DRAWINGS, ETC., SUBMITTED BY FABRICATOR.
TOPSOIL; IMPORTED STD. SPEC. 610	MT 412	1 KG.	SUBMIT SAMPLE WITH FORM 45.		ACCEPTED ON SATISFACTORY TEST RESULTS.
TOPSOIL; SALVAGED STD. SPEC. 610	NONE	NONE			
WATER; CORROSION TESTING	SAMPLE MT207	1 LITER	1 SAMPLE PER PROJECT/CONTRACT.		ACCEPTED ON SATISFACTORY TEST RESULTS.
WATER-PROOFING MATERIALS; STD. SPEC. 713		1 LITER	1 SAMPLE PER PROJECT/CONTRACT.		ACCEPTED ON SATISFACTORY TEST RESULTS.
WEAR, CRUSHED TOP SURFACING - TYPE A & TYPE B CRUSHED BASE COURSE – TYPE A & TYPE B	MT209	25 KG.		3 WEAR SAMPLES FOR EACH TYPE OF MATERIAL TAKEN AT RANDOM DURING THE PRODUCTION OF STOCKPILE AGGREGATES.	3 RANDOM SAMPLES FOR WEAR.
WOOD ITEMS; TIMBER TREATED	NONE	NONE	VISUAL INSPECTION.		INSPECTED AT THE MILL/TREATING PLANT AND ACCEPTANCE ISSUED

NOTE: Numbers in parentheses are page numbers

MATERIAL	TEST/ SAMPLE METHOD	SAMPLE SIZE	SAMPLING, TESTING AND ACCEPTANCE ISSUED BY		
			FIELD	DISTRICT/AREA LAB	MATERIALS BUREAU
STD. SPEC. 706					SUBJECT TO FINAL FIELD INSPECTION.
WOOD ITEMS; TIMBER UNTREATED STD. SPEC. 706	NONE	NONE	VISUAL INSPECTION.		INSPECTED AT THE MILL/TREATING PLANT AND ACCEPTANCE ISSUED SUBJECT TO FINAL FIELD INSPECTION.

MT-601
SECTION II
Trade Name Products

1.0 Concrete Admixtures

1.1 Air Entraining Agents

MB-AE10	Master Builders Co.
Protex	Protex Industries, Inc.
Protex Concentrate	Protex Industries, Inc.

1.2 Water Reducer Admixtures Type A

Pozzolith 322N	Master Builders Co.
Pozzolith 122N	Master Builders Co.
Pozzolith 300N	Master Builders Co.
Protex PDA 25 DP	Protex Industries, Inc.
Protex PDA 25 XL	Protex Industries, Inc.
Pro-Krete N	Protex Industries, Inc.
PSI 400N	Gifford-Hill & Co., Inc.

1.3 Water Reducing & Retarding Admixtures Type D

Pozzolith 100R	Master Builders Co.
Pozzolith 122R	Master Builders Co.
Pozzolith 300R	Master Builders Co.
Protex PDA 25 DP	Protex Industries, Inc.
Protex PDA 25 R	Protex Industries, Inc.
Pro-Krete R	Protex Industries, Inc.

2.0 Concrete Curing Compounds

Promulsion 50 AW	Protex Industries, Inc.
LR-151 (Red Dye)	Protex Industries, Inc.
PW-3B (White)	Protex Industries, Inc.
Spec.-Cure (White)	Building Specialties
Spec.-Cure (Clear)	Building Specialties

3.0 Miscellaneous

Water Stop (bridges)	All Domestic Brands
Seed, Certified Blue Tag	Montana Seed Growers Association
Registered Purple Tag	Montana Seed Growers Association
Foundation - White Tag	Montana Seed Growers Association
Set 45	Set Products, Inc.
(Patching & Anchor Bolt Material)	
SS-1	All Domestic Brands
(Emulsified Binder for Seeding Under 10,000 gal.)	
Probond Epoxy	Protex Industries,
(ET-265 and ET-266)	Inc.
"Landglas" Fiberglass Roving	Owens Corning